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## THE TAXONOMIC STATUS OF STEMMATELLA (COMPOSITAE-HELIANTHEAE)

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The genus *Stemmatella* was first proposed by Weddell (Bull. Soc. Bot. Fr. 12:82. 1865) in a list of plants collected in Bolivia by M. G. Mandon and identified by Schultz-Bipontinus. Specifically, the name *Stemmatella congesta* Wedd. preceded by the collector's No. 293, was listed without description or comment. As such *Stemmatella* was a *nomen nudum* until subsequently published by Hoffmann (1894) in his treatment of the Compositae. Bentham (1873), however, drew up a rather complete generic description, although he neglected to mention *S. congesta*, or any other species name, nor did he make reference to a specimen, but presumably he had access to one of the Mandon collections (see below).

I became interested in the taxonomy of *Stemmatella* while attempting to identify epappose forms of *Galinsoga parviflora* (Turner *et al.*, 1962; Turner and King, 1964), for such specimens, by Hoffmann's treatment would key to *Stemmatella* instead of *Galinsoga*; indeed, collections filed under the two generic names were almost identical, in spite of the fact that they were placed by both Bentham and Hoffmann in the subtribes Verbesininae and Galinsoginae respectively.

Bentham had a single sheet with 2 attached specimens of the *Mandon 293* collection at his disposal (K). One of the specimens contains heads with epappose achenes; the other has heads with epappose ray achenes *but* the disk achenes possess a well-developed pappus. One must assume

that Bentham examined only the former in drawing up his otherwise excellent generic description.<sup>1</sup> Hoffmann, apparently relying on Bentham's treatment, also assumed that the disk achenes were epappose, for this is the character which he uses to separate *Stemmatella* from the subtribe Galinsoginae. In any case, I have examined in detail nine isotypes of *S. congesta* (K, 2; NY, 6; US, 1; the plants are all quite dwarf as if closely browsed or trodden on) and in each (except for one of the specimens at Kew) the ray achenes are epappose while the disk achenes support a well-developed pappus, very similar to that of *Galinsoga parviflora*.

Hoffmann, after his 1894 treatment of *Stemmatella* in which but a single species was acknowledged, must have recognized additional species, for in 1901 we find Hieronymus publishing a manuscript name of Hoffmann's, *Stemmatella urticifolia* (H.B.K.) O. Hoffm. ex Hieron. (Bot. Jahrb. 28:601). In this same publication Hieronymus described two additional species, *S. sodiroi* and *S. lehmannii*. Both of the latter were recognized as closely related to *S. urticifolia*. Oddly enough, Hieronymus himself must have recognized the illogical separation of the two genera, for after his description of *S. sodiroi* he comments, "An igitur melius genus *Stemmatella* genere *Galinsoga* conjungendum sit?" He was, in fact, as indicated below, describing nothing but a form (with glabrate achenes) of *Galinsoga urticifolia* (H.B.K.) Benth.

Having now examined type material of all of the species-names proposed for *Stemmatella*, it is my opinion that the genus should be submerged in *Galinsoga*.<sup>2</sup> My nomenclatural and morphological observations follow:

STEMMATELLA CONGESTA Wedd. ex Hoffm., *Naturl. Pflanzenfam.* 4(5): 231. 1894. Bolivia, Prov. Larecaga "Viciniis sorata," *Mandon 293*, (w/o date), (isotypes, GH!, K!, NY!, US!).

The nature of the types on which this name is based is discussed above. *Stemmatella congesta* appears to be closest to *Galinsoga calva* Rusby (non *G. calva* Sch.-Bip., 1865; *nomen nudum*). The *Mandon 293*

<sup>1</sup> Ironically, in the original version of the present paper, after my initial examination of the material at Kew, I implied that Bentham had been guilty of faulty observation. In fact, I had looked at *only* the specimen which Bentham had not examined—I am grateful to the reviewer of this paper for suggesting a second look.

<sup>2</sup> While re-examining specimens at Kew filed under the generic name *Stemmatella*, I came across an unpublished manuscript (inserted in one of the species-folders) entitled "Notes by P. G. Wilson, 1957." Mr. Wilson makes the following observations which substantiate my own, "*Stemmatella* Wedd. has been delimited in the Genera Plantarum by having the ray florets enclosed within an outer involucre bract and two palae, as well as having naked achenes. This description applies to *Wiborgia urticifolia* Kunth which has been transferred to *Stemmatella* by Hoffm. ex Hieronymus. However, the character of the ray florets being enclosed within three bracts is also held by *Galinsoga* which normally has achenes with a pappus. *W. urticifolia* matches *Galinsoga hispida* Benth. exactly, except for the pappus character (present in *G. hispida*) and they come from the same locality."

collections are a good match for isotypic material of *G. calva* (Bolivia, Talca Chugiaguillo, *A. Miguel Bang* 809, Apr. 1890) which was examined at Kew. The latter is from the same general area, has similar, congested heads, ray achenes without pappus and disc achenes with pappus, etc. A critical evaluation of the nomenclatural status of the numerous specific names proposed for *Galinsoga* must await a more thorough biological study of that genus, but in my opinion there can be no question but what the type species of *Stemmatella* is in fact a *Galinsoga*.

*GALINSOGA URTICIFOLIA* (H.B.K.) Benth., Oesterr. Vid. Middel. 102. 1852. *Wiborgia urticifolia* H.B.K., Nov. Gen. Sp. 4:201 (257) t. 389. 1820. "Crescit juxta villam Marchionis de Miraflores, inter Mulalo et Pansache, alt. 1700 hex. (Regno Quitensi.)" June. *Sabazia urticifolia* (H.B.K.) DC., Prod. 5:497. 1836. *Stemmatella urticifolia* (H.B.K.) O. Hoffm. ex Hieron., Bot. Jahrb. 28: 601 1901. *Stemmatella sodiroi* O. Hoffm. ex Hieron., Bot. Jahrb. 28: 601-602. 1901. Ecuador, Crescit in regione interandina, *Sodiro* 31/1, (fragment of holotype, US!; phototypes, GH!, NY!, US!). *Stemmatella urticifolia* var. *eglandulosa* Hieron., Bot. Jahrb. 36:487. 1905, as *Stematella*. Peru, near Cutervo, April 1879, *Jelski* 609. *Sabazia urticifolia* var. *venezuelensis* Steyer., Fieldiana Bot. 28: 672. 1953. Venezuela, Lara, "Pastured open slopes of mountain between Santo Domingo and Los Quebraditos," *J. A. Steyermark* 55379, Feb. 8, 1944, (holotype, F!).

*Galinsoga urticifolia* is, except for its epappose disk florets, very similar to *G. parviflora* (as noted by Wilson, cf. footnote 3, above). However, its natural distribution and ecology appears to differ from the latter in that it occupies more tropical, wetter areas at presumably somewhat higher elevations. *G. parviflora* is more widespread, occurring in both tropical and subtropical areas, usually in dryer, somewhat lower habitats. These two species unquestionably come in close contact in certain areas so that hybridization must be reckoned as a factor in their variation. Additional cyto-morphological observations can be found in Turner et al. (1962) and Turner & King (1964).

*Stemmatella urticifolia* var. *eglandulosa* and *Sabazia urticifolia* var. *venezuelensis* are apparently only forms of the species, the former lacking glandular trichomes on the stems and the latter possessing more densely pubescent achenes than is typical for the species. Both of these conditions in varying combinations are found in individuals from throughout the range of *Galinsoga urticifolia*.

*STEMMATELLA LEHMANII* Hieron., Bot. Jahrb. 28:602. 1902. Columbia, Vicinity of Popayan, 1600-2200 m, *Lehmann* 5667 (phototypes, NY!, TEX!, US!).

This species appears to belong to the genus *Sabazia*. It is apparently a perennial with thin rhizomes (*Core* 1015); the heads are relatively large on long peduncles which arise singly from the leaf axils; the ligules are quite well developed and, in proportion to their length, shortly 3-

lobed. To my knowledge, these characters are not found in *Galinsoga*. Except for the types, the only collection of this taxon which I have examined has been that of *Core 1015* (US), from a roadside between Valencia and San Sebastian, Colombia, 21 July, 1944: "Weed in thickets; disk flower yellow, ray flowers white above, pink beneath, rather showy."

Finally it should be noted that the epappose *Galinsoga mandonii* Sch.-Bip. (Linnaea 34:529. 1866), which is distinguished from the more widespread *G. urticifolia* by its smaller, congested (sessile) heads and deep purple involucre bracts, is sympatric with *G. urticifolia* in southern Bolivia and Peru. I have examined isotypic material of *G. mandonii* (Bolivia, Prov. Larecaja, *Mandon 76*, F, K) and the following collections, all from Peru: *Cook & Gilbert 210* (US); *Killip & Smith 21741* (F); *Macbride & Featherstone 573, 1582* (F). While closely related to *G. urticifolia*, it seems distinct; at least collections of a similar nature were not seen from the relatively well collected Colombia and Ecuador. However, a tendency toward intergradation with *G. mandonii* may be inferred from some of the collections of *G. urticifolia* from Peru (e.g., *Macbride & Featherstone 2105*, F).

As may be surmised, *Galinsoga* is in much need of experimental study, both in the garden and in the field. Several of its "species" have become widespread weeds in the wetter temperate regions of both hemispheres and because it grows well in such climates it ought to lend itself to experimental work in those areas. If the amplitude of morphological variation of the several tropical species of *Galinsoga* which I have examined is paralleled by a similar amplitude in physiological variation, then its success as an aggressive (or perhaps more aptly, "delightful") weed outside of its native habitat becomes explicable (cf. Baker's comments, 1962, on tropical weeds).

John Beaman and an anonymous reviewer provided helpful suggestions and L. H. Shinnars assisted with certain bibliographic problems. Financial support was provided in part by NSF GB-1216. I am grateful for all these benefits.

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